



New Records of Two Agathidiine Genera and Species, and Key to the Genera of the Agathidiini in Korea (Coleoptera: Leiodidae: Leiodinae)

Sun-Jae Park, Hideto Hoshina¹⁾, and Kee-Jeong Ahn*

Department of Biology, Chungnam National University,
Daejeon City 305-764, South Korea. E-mail: kjahn@cnu.ac.kr

¹⁾Department of Regional Environment, Fukui University,
Fukui Prefecture 910-8507, Japan

Abstract A taxonomic study of two agathidiine genera and species in Korea is presented. The genera and two species [*Cyrtoplastus seriepunctatus* (Brisout, 1867) and *Liodopria maculicollis* Nakane, 1963] are reported for the first time in Korea. Descriptions and illustrations of diagnostic characters of these species, and key to the genera of the Agathidiini are provided.

Key words : Taxonomy, key, *Cyrtoplastus*, *Liodopria*, Korea

INTRODUCTION

The genera *Cyrtoplastus* Reitter and *Liodopria* Reitter belong to the tribe Agathidiini Westwood. The genus *Cyrtoplastus* can be recognized by the combination of: dorsum usually with irregular punctures or rows of punctures, rarely almost no punctures; head sharply constricted behind eyes, very smaller than body; antennomeres 9-11 clavate; tarsal formula 5-5-4 in male, 5-4-4 or 4-4-4 in female (Angelini and De Marzo, 1990; Hoshina, 1996). The genus *Liodopria* is characterized by combination of: dorsum often maculate; head narrowed behind eyes; antennae usually with 11 articles, rarely apparently 10 articles; elytra without rows of punctures; tibiae relatively slender; tarsal formula 5-5-4 in male, 4-4-4 in female; parameres of the aedeagus usually short (Angelini and De Marzo, 1985, 1990).

In East Asia, *C. seriepunctatus* has been recorded from Japan and Mongolia (Portevin, 1914; Hlisnikovsky, 1967). Later, seven species were added to the East Asian fauna of *Cyrtoplastus* (Angelini and De Marzo, 1990; Hoshina, 1996; Angelini and Cooter, 1998, 1999; Angelini and Svec, 2000). In the genus *Liodopria*, Nakane (1963) and Angelini and De Marzo (1985) described *L. maculicollis* and *L. taiwanensis* from Japan and Taiwan, respectively.

In Korea, three genera, *Agathidium*, *Anisotoma*, and *Besuchetionella* of the tribe Agathidiini have been reported (Angelini, 1992; Hoshina *et al.*, 2002; Park *et al.*, 2002). However, no species of *Cyrtoplastus* and *Liodopria* have been recorded, though *C. seriepunctatus* is distributed widely in the Eurasian Continent, Japan, and Taiwan (Angelini and Cooter, 1999).

We had field surveys in Korea and collected many leiodid beetles using flight intercept traps (FIT), sifting litter layers, bait traps, and beating during last three years.

In this paper we report genera and species of *C. seriepunctatus* (Brisout, 1867) and *L.*

* To whom correspondence should be addressed.

maculicollis Nakane, 1963 for the first time in Korea. We also, provide descriptions and illustrations of diagnostic characters of these species, and key to the genera of the Agathidiini. Materials for this study are deposited in the Chungnam National University Insect Collection (CNUIC), Daejeon.

RESULTS

Genus *Cyrtoplastus* Reitter, 1884 검정우리알버섯벌레속 (신칭)

Cyrtoplastus Reitter, 1884: 110; Hoshina, 1996: 201.

Type species: *Cyrtoplastus seriopunctatus* Reitter, 1884.

***Cyrtoplastus seriopunctatus* (Brisout, 1867)** 검정우리알버섯벌레 (신칭) (Figs. 1–6)

See Hatch (1929) and Hoshina (1996, 1998) for synonymy and references.

Descriptions. Length 3.7–4.0 mm. Body (Fig. 1) strongly convex, shining, about 1.6 times as long as wide. Dorsum reddish brown to black in general; antennomeres 1–8 and apical

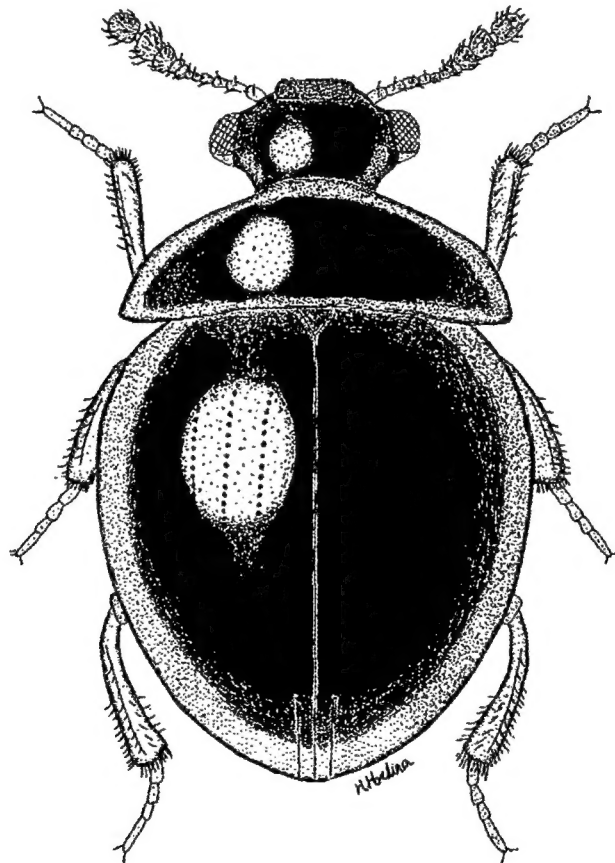
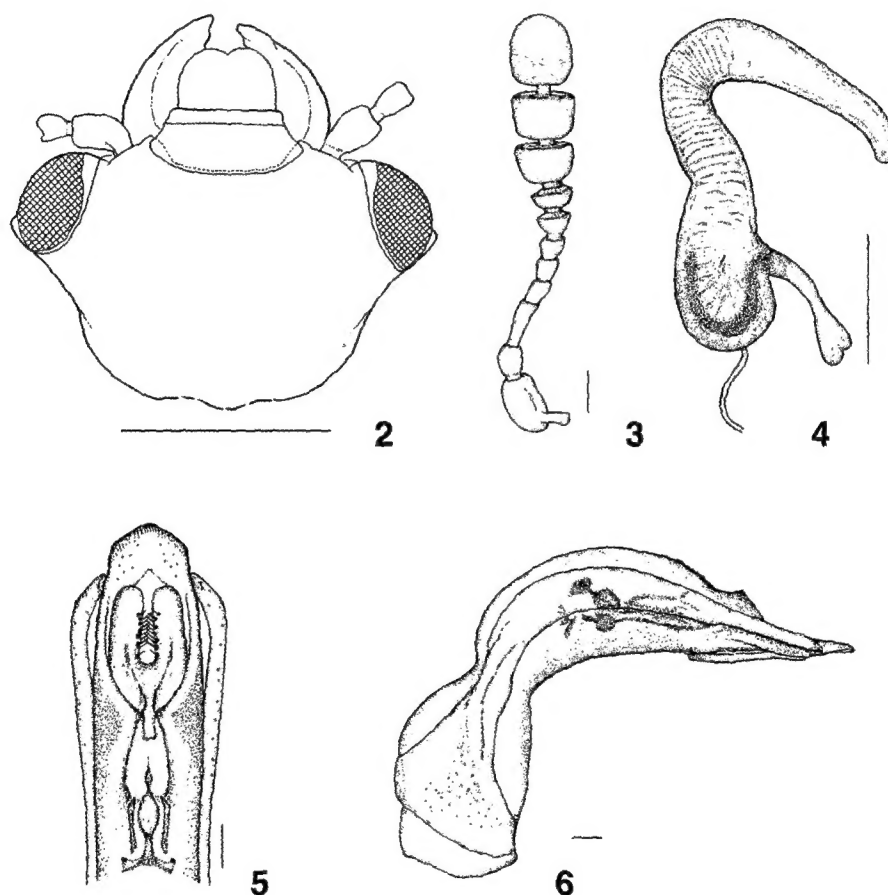


Fig. 1. *Cyrtoplastus seriopunctatus* (Brisout). Habitus, dorsal aspect. Scale bar = 0.5 mm.

two-thirds of 11 reddish brown, 9–10 and basal one-third of 11 dark brown; legs reddish brown. Head (Figs. 1 and 2) minutely and densely punctate; constricted behind eyes; widest at side of eyes; eyes prominent; clypeal line clear and impressed. Antennae (Fig. 3) elongate; little longer than width of head; antennomere 8 not smaller than 7, 3 about 1.5 times as long as 2, apical end of 11 rounded. Elytra with 6 rows of punctures, intervals between rows with minute and sparse punctures; lateral margin of elytra with many punctures as large as those forming rows. Tibiae distally dilated, slightly curved. Tarsal formula 5–5–4 in male, 4–4–4 in female. Median lobe (Figs. 5 and 6) elongate and tubular, apically narrowed in ventral aspect, dorsally pointed at apical two-thirds in lateral aspect; median orifice with many setae; median foramen dorsally expanded in lateral aspect. Parameres (Figs. 5 and 6) reached near apex of median lobe, with very small apical paired setae, apical end curved forward median lobe. Spermatheca (Fig. 4) slender, with long and large spermathecal gland, base slightly swollen.

Materials examined. 2 ♀, Mt. Ososan, Sangdam-ri, Gwangcheon-eup, Hongseong-gun, Chungnam Prov., 19 V–2 VI 1999 (US Hwang and HJ Kim), ex bait trap; 1 ♀, Piagol, Mt.



Figs. 2–6. *Cyrtoplastus seriepunctatus* (Brisout): 2. head, dorsal aspect; 3. antenna, dorsal aspect; 4. spermatheca, lateral aspect; 5. aedeagus, ventral aspect; 6. aedeagus, lateral aspect. Scale bars = 0.5 mm for Fig. 2, 0.1 mm for Figs. 3–6.

Jirisan, Gurye-gun, Jeonnam Prov., 24-26 V 2000 (HK Choi, JH Song, and MS Kim), *ex* bait trap; 1 ♀, Mt. Gabjongsan, Jichon-dong, Sangju City, Gyeongbuk Prov., 2 VII 2000 (YB Cho), *ex* sifting; 1 ♀, Chungnam Nat. Univ., Gung-dong, Yuseong-gu, Daejeon City, Chungnam Prov., 14 V 2002 (JS Park), *ex* under bark; 1 ♀, Chungnam Nat. Univ., Gung-dong, Yuseong-gu, Daejeon City, Chungnam Prov., 27 V 2002 (JS Park), *ex* under bark.

Distribution. Korea, Japan, Taiwan, Mongolia, Russia (Siberia), Europe.

Remarks. This species is similar to *Cyrtoplastus hiranoi* Hoshina, 1996 with eight rows of punctures, but distinguished from the latter by elytra with six rows of punctures. *C. seriepunctatus* is widely distributed in Europe, Russia, China, and so on, but not shown clear regional variations in aedeagus and external characters.

Genus *Liodopria* Reitter, 1909 얼룩우리알버섯벌레속 (신칭)

Liodopria Reitter, 1909: 256; Angelini and De Marzo, 1985: 24.

Type species: *Anisotoma serricornis* Gyllenhal, 1813.

***Liodopria maculicollis* Nakane, 1963 얼룩우리알버섯벌레 (신칭)**

(Figs. 7-11)

Liodopria maculicollis Nakane, 1963: 41; Perkovsky, 1987: 22; Angelini & De Marzo, 1990: 65.

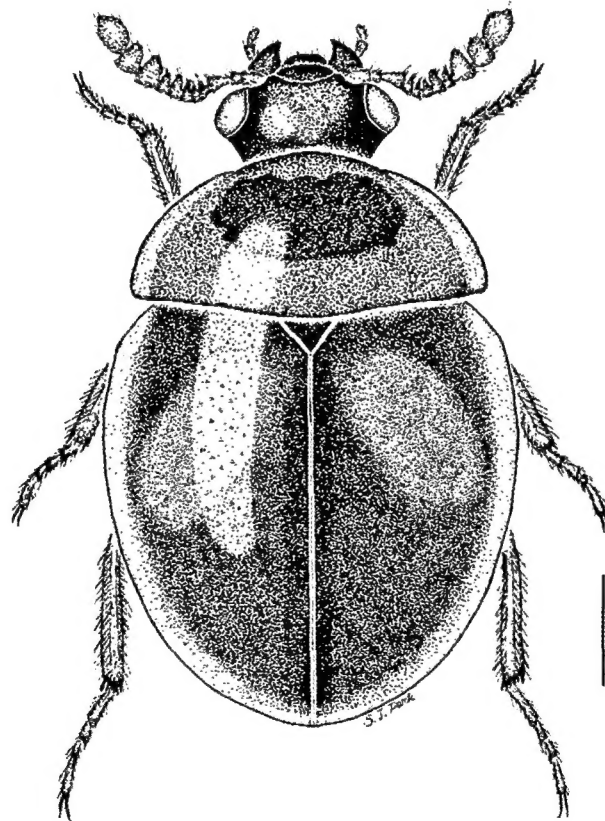
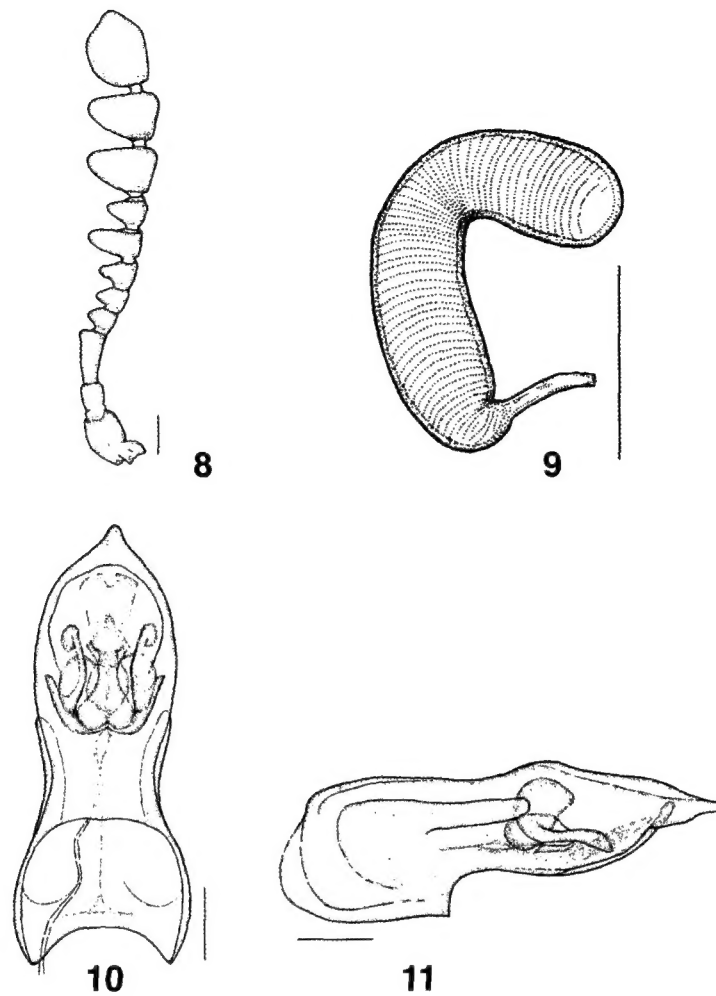


Fig. 7. *Liodopria maculicollis* Nakane. Habitus, dorsal aspect. Scale bar = 0.5 mm.



Figs. 8-11. *Liodopria maculicollis* Nakane: 8. antenna, dorsal aspect; 9. spermatheca, lateral aspect; 10. aedeagus, ventral aspect; 11. aedeagus, lateral aspect. Scale bars = 0.1 mm.

Descriptions. Length 2.5–3.5 mm. Body (Fig. 7) strongly convex, about 1.8 times as long as wide. Head (Fig. 7) bicolor, laterally and basally dark brown, from middle to apex and clypeus brown; antennomeres 1–8 and 11 reddish brown with 11 apically paler, 9 and 10 dark brown; pronotum (Fig. 7) light brown with large dark brown patch at middle; elytra (Fig. 7) dark brown with variable reddish brown area near scutellum to lateral margin; scutellum brown or reddish brown; legs reddish brown. Head (Fig. 7) minutely and sparsely punctate; narrowed behind eyes; eyes prominent; clypeal line clear and impressed. Antennae (Fig. 8) elongate, serrate; antennomere 8 smaller than 7 and 9, 3 longitudinally triangular and about 1.3 times as long as 2, apical end of 11 slightly pointed. Elytra finely and densely punctate, punctures somewhat seriate but not clear. Tibiae slender. Tarsal formula 5–5–4 in male, 4–4–4 in female. Median lobe (Figs. 10 and 11) apically enlarged, apex slightly pointed in ventral aspect. Parameres (Figs. 10 and 11) very short, about one-third of median lobe, without

apical setae. Spermatheca (Fig. 9) tubular, without spermathecal gland, apically rounded.

Materials examined. ♂ (holotype), Mt. Ohdaigahara, Nara, Honshu, 22 VII 1953 (T Nakane and T Kishii leg), preserved in the collection of Hokkaido University Museum; 2 ♀, Waljeongsa, Mt. Odaesan, Dongsan-ri, Jinbu-myeon, Pyeongchang-gun, Gangwon Prov., 22 VIII–20 X 2000 (KJ Ahn and WS Hwang), *ex* FIT; 3 ♂, 2 ♀, Sangwonsa, Mt. Odaesan, Dongsan-ri, Jinbu-myeon, Pyeongchang-gun, Gangwon Prov., 4 VI–22 VI 2001 (KJ Ahn, SJ Park, MS Kim, and MJ Jeon), *ex* FIT; 5 ♂, 12 ♀, Sangwonsa, Mt. Odaesan, Dongsan-ri, Jinbu-myeon, Pyeongchang-gun, Gangwon Prov., 22 VI–16 VIII 2001 (SJ Park and CW Shin), *ex* FIT; 2 ♀, Mt. Baekdeoksan, Meokgol, Unkyo 2-ri, Bangrim-myeon, Pyeongchang-gun, Gangwon Prov., 12 VII–16 VIII 2001 (KJ Ahn, SJ Park, and CW Shin), *ex* FIT; 5 ♂, 5 ♀, Mt. Sambangsan, Noron-ri, Pyeongchang-eup, Pyeongchang-gun, Gangwon Prov., 13 VII–15 VIII 2001 (KJ Ahn, SJ Park, and CW Shin), *ex* FIT; 1 ♂, 1 ♀, Sangwonsa, Mt. Odaesan, Dongsan-ri, Jinbu-myeon, Pyeongchang-gun, Gangwon Prov., 16 VIII–15 IX 2001 (SJ Park and CW Shin), *ex* FIT; 1 ♂, 4 ♂, Sangwonsa, Mt. Odaesan, Dongsan-ri, Jinbu-myeon, Pyeongchang-gun, Gangwon Prov., 18 V–23 V 2002 (SJ Park and CW Shin), *ex* FIT.

Distribution. Korea, Japan, Russia (Siberia).

Remarks. Nakane (1963) described this species as a new species without figures. *Liodopria maculicollis* is known to be a rare species (Hisamatsu, 1985) and is collected accidentally by beating methods. However, we could discover that FIT was the effective method to collect this species through our field surveys.

Key to the genera of the tribe Agathidiini in Korea

1. Body shorter than 1.8 mm; dorsum with strong spines; parameres longer than median lobe; tarsal formula 4–4–4 in male, 4–4–3 in female *Besuchetionella* Angelini and Peck
- Body longer than 1.8 mm; dorsum without strong spines; parameres shorter than median lobe; tarsal formula 5–5–4 or 4–4–4 in male, 5–4–4 or 4–4–4 in female 2
2. Head slightly narrowed behind eyes; tempora present; elytra without rows of punctures *Agathidium* Panzer
- Head sharply narrowed behind eyes; tempora absent; elytra with or without rows of punctures 3
3. Antennomere 8 larger than 7; antenna almost symmetrical; supraocular carina present *Cyrtoplastus* Reitter
- Antennomere 8 distinctly smaller than 7; antenna strongly asymmetrical; supraocular carina absent 4
4. Elytra without sutural stria; distal 3 antennomeres forming club *Liodopria* Reitter
- Elytra with sutural stria (rarely absent); distal 5 antennomeres forming club *Anisotoma* Panzer

Acknowledgements We thank Dr. M. Ôhara (Hokkaido University Museum, Sapporo, Japan) who kindly gave us an opportunity to examine the type specimen, and Mr. F. Angelini (Brindisi, Italy), Mr. J. Cooter (Hereford, England), and Dr. Z. Svec (Prague, Czech Republic) who generously provided us with valuable references. We also thank Mr. C.-W. Shin (Chungnam National University, Daejeon City, Korea) for his cooperation to collect beetles.

REFERENCES

- Angelini, F. 1992. Anisotomini della Corea con descrizione di tre nuove specie (Coleoptera: Leiodidae). *Rev. suisse Zool.* 99(2): 431–438.
- Angelini, F. and J. Cooter. 1998. New species of Agathidiini Westwood (Coleoptera: Leiodidae: Leiodinae) from China. *Ent. Gazette* 49: 131–137.
- Angelini, F. and J. Cooter. 1999. The Agathidiini of China with descriptions of twelve new species of *Agathidium* Panzer (Coleoptera: Leiodidae). *Orient. Insects* 33: 187–232.
- Angelini, F. and L. De Marzo. 1985 [dated 1984]. Descrizione di 13 specie nuove di Anisotomini dell'Asia sudorientale (Coleoptera: Leiodidae). *Ent., Bari* 19: 23–49.
- Angelini, F. and L. De Marzo, L. 1990. [dated 1988] Anisotomini del Giappone (Coleoptera: Leiodidae). *Ent., Bari* 23: 47–122.
- Angelini, F. and L. De Marzo. 1998. Supplement to the knowledge of the Agathidiini of Taiwan (Coleoptera: Leiodidae). *Rev. suisse Zool.* 105(1): 125–138.
- Angelini, F. and Z. Svec. 2000. New species of the genera *Cyrtusa*, *Pseudocolenis*, *Cyrtoplastus* and *Agathidium* (Coleoptera: Leiodidae: Leiodinae) from China. *Acta Soc. Zool. Bohem.* 64: 119–141.
- Hatch, M.H. 1929. Leiodidae, Clambidae. In Schenkling, S. (ed), *Coleopterorum Catalogus* 8(105): 1–100. W-Junk, Berlin.
- Hisamatsu, S. 1985. The Coleoptera of Japan in color vol. II. Hoikusha Publishing Co., Ltd., Osaka. pp. 233–237.
- Hlisnikovsky, J. 1967. 89. Agathidiini. *Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei* (Coleoptera). *Reichenbachia* 9(27): 237–248.
- Hoshina, H. 1996. A taxonomic study on the genus *Cyrtoplastus* (Coleoptera: Leiodidae) of Japan. *Jpn. J. syst. Ent.* 2(2): 201–206.
- Hoshina, H. 1998. A taxonomic study of the tribe Agathidiini (Coleoptera: Leiodidae) from the Ryukyus, Japan. *Jpn. J. syst. Ent.* 4(1): 137–159.
- Hoshina, H., S.-J. Park, and K.-J. Ahn. 2002. New record of the genus and species, *Besuchetionella nipponica* from Korea (Coleoptera: Leiodidae). *Jpn. J. syst. Ent.* 8(1): 59–61.
- Nakane, T. 1963. New or little known Coleoptera from Japan and its adjacent regions. *XXI Fragm. Coleopterol.*, Kyoto 10: 40–42.
- Park, S.-J., H. Hoshina, and K.-J. Ahn. 2002. The Korean species of the genus *Anisotoma* Panzer (Coleoptera: Leiodidae: Leiodinae). *Ins. Koreana* 19(2): 187–197.
- Perkovsky, E.E. 1987. An addition to the fauna of the Leiodinae beetles (Coleoptera: Leiodidae) of the Far East with description of three new species. *Vestn. Zool.* 6(35): 19–24.
- Portevin, G. 1914. Revision des Silphides, Lioides et Clambides du Japon. *Ann. Soc. ent. Bleg.* 58: 212–236.

(Received: December 10, 2002, Accepted: January 15, 2003)